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The Applicants do not feel that a fee is necessary at this time, but if the sum of \$180.00 is due under 37 CFR § 1.17(p) pursuant to § 1.97, the Commissioner is hereby authorized to charge this fee, and any other fee necessary to make this submission timely, to the Deposit Account No. 20-0782/AMAT/5162/L/AKT/SB/BTP.

Respectfully submitted,

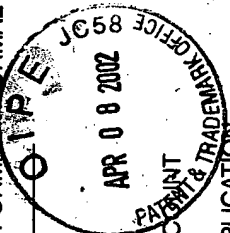


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Attorney for Applicants

DOCKET No.: AMAT/5162/L/AL7/SB
SERIAL No.: 101024 985
FILED: 18 December 2007
APPLICANT: Applied Materials, Inc.
INVENTOR: Shang, et al.

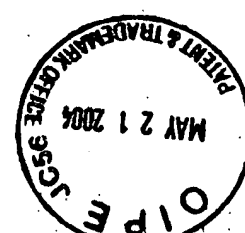
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- ☐ AFFIDAVIT
☐ AMENDMENT
☐ APPLICATION PAPERS - OATH/DECLARATION
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☐ SHEET(S) OF DRAWING(S) FORMAL/NEORMAL
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☐ LETTER
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☐ PETITION



- ☒ PRELIMINARY AMENDMENT
☒ INFORMATION DISCLOSURE STATEMENT (Tutinal)
☐ REQUEST FOR EXTENSION OF TIME
☐ RESPONSE TO
☐ SPECIMENS
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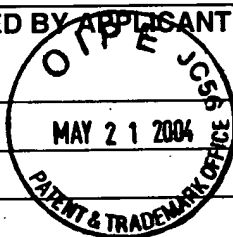


U.S. Department of Commerce, Patent and Trademark Office					Docket No.		Serial No.	
(PTO Form 1449 modified)					AMAT/5162		10/024,985	
LIST OF PATENTS AND PUBLICATIONS CITED BY APPLICANT					Applicant			
					Shang, et al.			
(Use several sheets if necessary)					Filing Date		Group	
Examiner Unknown					December 18, 2001		Unknown	
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	A1	4,058,430	11/15/77	Suntola et al.	156	611	11/25/1975	
	A2	4,389,973	06/28/83	Suntola et al.	118	725	12/11/1981	
	A3	4,413,022	11/01/83	Suntola et al.	427	255.2	06/21/1979	
	A4	4,486,487	12/04/84	Skarp	428	216	04/25/1983	
	A5	4,767,494	08/30/88	Kobayashi et al.	156	606	09/19/1986	
	A6	4,806,321	02/21/89	Nishizawa et al.	422	245	07/21/1985	
	A7	4,829,022	05/09/89	Kobayashi et al.	437	107	12/09/1986	
	A8	4,834,831	05/30/89	Nishizawa et al.	156	611	09/04/1987	
	A9	4,838,983	06/13/89	Schumaker et al.	156	613	03/18/1988	
	A10	4,838,993	06/13/89	Aoki et al.	156	643	12/03/1987	
	A11	4,840,921	06/20/89	Matsumoto	437	89	06/30/1988	
	A12	4,845,049	07/04/89	Sunakawa	437	81	03/28/1988	
	A13	4,859,625	08/22/89	Nishizawa et al.	437	81	11/20/1987	
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	B1	01/66832 A2	09/13/2001	WO	C30B	16/44		X
	B2	01/40541 A1	06/07/2001	WO	C23C	16/40		X
	B3	01/36702 A1	05/25/2001	WO	C23C	16/00		X
	B4	01/29893 A1	04/26/2001	WO	H01L	21/768		X
	B5	01/29891 A1	04/26/2001	WO	H01L	21/768		X
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	C1	Hultman, et al., "Review of the thermal and mechanical stability of TiN-based thin films", <i>Zeitschrift Fur Metallkunde</i> , 90(10) (Oct. 1999), pp. 803-813.						
	C2	Klaus, et al., "Atomic Layer Deposition of SiO ₂ Using Catalyzed and Uncatalyzed Self-Limiting Surface Reactions", <i>Surface Review & Letters</i> , 6(3&4) (1999), pp. 435-448.						
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	A14	4,859,627	08/22/89	Sunakawa	437	81	07/01/1988	
	A15	4,861,417	08/29/89	Mochizuki et al.	156	610	03/24/1988	
	A16	4,876,218	10/24/89	Pessa et al.	437	107	09/26/1988	
	A17	4,927,670	05/22/1990	Erbil	427	255.3	06/22/1988	
	A18	4,931,132	06/05/90	Aspnes et al.	156	601	10/07/1988	
	A19	4,960,720	10/02/90	Shimbo	437	105	08/24/1987	
	A20	4,975,252	12/04/90	Nishizawa et al.	422	245	05/26/1989	
	A21	4,993,357	02/19/91	Scholz	118	715	12/21/1989	
	A22	5,013,683	05/07/91	Petroff et al.	437	110	01/23/1989	
	A23	5,082,798	01/21/92	Arimoto	437	108	09/27/1990	
	A24	5,085,885	02/04/92	Foley et al.	477	38	09/10/1990	
	A25	5,091,320	02/25/92	Aspnes et al.	437	8	06/15/1990	
	A26	5,130,269	07/14/92	Kitahara et al.	437	111	04/25/1989	
	A27	5,166,092	11/24/92	Mochizuki et al.	437	105	10/30/1990	
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	B6	01/29280 A1	04/26/2001	WO	C23C	16/32		X
	B7	01/27347 A1	04/19/2001	WO	C23C	16/44		X
	B8	01/27346 A1	04/19/2001	WO	C23C	16/44		X
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*Examiner Initial		Including Author, Title, Date, Pertinent Pages, Etc.						
	C3	Yamaguchi, et al., "Atomic-layer chemical-vapor-deposition of silicon dioxide films with extremely low hydrogen content", <i>Appl. Surf. Sci.</i> , Vol. 130-132 (1998), pp. 202-207.						
	C4	George, et al., "Surface Chemistry for Atomic Layer Growth", <i>J. Phys. Chem.</i> , Vol. 100 (1996), pp. 13121-131.						
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	A28	5,225,366	07/06/93	Yoder	437	108	06/22/1990	
	A29	5,246,536	09/21/93	Nishizawa et al.	156	610	03/10/1989	
	A30	5,250,148	10/05/93	Nishizawa et al.	156	611	11/12/1991	
	A31	5,254,207	10/19/93	Nishizawa et al.	156	601	11/30/1992	
	A32	5,256,244	10/26/93	Ackerman	156	613	02/10/1992	
	A33	5,270,247	12/14/93	Sakuma et al.	437	133	07/08/1992	
	A34	5,278,435	01/11/94	Van Hove et al.	257	184	06/08/1992	
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	A36	5,290,748	03/01/94	Knuuttila et al.	502	228	07/16/1992	
	A37	5,294,286	03/15/94	Nishizawa et al.	156	610	01/12/1993	
	A38	5,296,403	03/22/94	Nishizawa et al.	437	133	10/23/1992	
	A39	5,300,186	04/05/94	Kitahara et al.	156	613	04/07/1992	
	A40	5,311,055	05/10/94	Goodman et al.	257	593	11/22/1991	
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	B11	00/79019 A1	12/28/2000	WO	C23C	16/00		X
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	C5	George, et al., "Atomic layer controlled deposition of SiO ₂ and Al ₂ O ₃ using ABAB...binary reaction sequence chemistry", <i>Appl. Surf. Sci.</i> , Vol. 82/83 (1994), pp. 460-467.						
	C6	Wise, et al., "Diethyldiethoxysilane as a new precursor for SiO ₂ growth on silicon", <i>Mat. Res. Soc. Symp. Proc.</i> , Vol. 334 (1994), pp. 37-43.						
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(Use several sheets if necessary)		Filing Date December 18, 2001	Group Unknown
Examiner Unknown			

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	A41	5,316,615	05/31/94	Copel	117	95	03/09/1993
	A42	5,316,793	05/31/94	Wallace et al.	427	248.1	07/27/1992
	A43	5,330,610	07/19/94	Eres et al.	117	86	05/28/1993
	A44	5,336,324	08/09/94	Stall et al.	118	719	12/04/1991
	A45	5,338,389	08/16/94	Nishizawa et al.	117	89	04/21/1993
	A46	5,348,911	09/20/94	Jurgensen et al.	117	91	04/26/1993
	A47	5,374,570	12/20/94	Nasu et al.	437	40	08/19/1993
	A48	5,395,791	03/07/95	Cheng et al.	437	105	10/20/1993
	A49	5,438,952	08/08/1995	Otsuka	117	84	01/31/1994
	A50	5,439,876	08/08/95	Graf et al.	505	447	08/16/1993
	A51	5,441,703	08/15/95	Jurgensen	422	129	03/29/1994
	A52	5,443,033	08/22/95	Nishizawa et al.	117	86	03/11/1994
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	B14	00/16377 A2	03/23/2000	WO	H01L	---		X
	B15	00/15881 A2	03/23/2000	WO	C30B	---		X
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OTHER ART

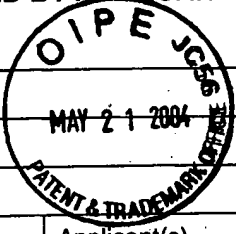
*Examiner Initial		Including Author, Title, Date, Pertinent Pages, Etc.
	C7	Niinisto, et al., "Synthesis of oxide thin films and overlayers by atomic layer epitaxy for advanced applications", <i>Mat. Sci. & Eng.</i> , Vol. B41 (1996), pp. 23-29.

Examiner

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	A55	5,458,084	10/17/95	Thorne et al.	117	89	12/09/1993
	A56	5,469,806	11/28/95	Mochizuki et al.	117	97	08/20/1993
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	A58	5,483,919	01/16/96	Yokoyama et al.	117	89	08/17/1994
	A59	5,484,664	01/16/96	Kitahara et al.	428	641	01/21/1994
	A60	5,503,875	04/02/96	Imai et al.	427	255.3	03/17/1994
	A61	5,521,126	05/28/96	Okamura et al.	437	235	06/22/1994
	A62	5,527,733	06/18/96	Nishizawa et al.	437	160	02/18/1994
	A63	5,532,511	07/02/96	Nishizawa et al.	257	627	03/23/1995
	A64	5,540,783	07/30/96	Eres et al.	118	725	05/26/1994
	A65	5,601,651	02/11/97	Watabe	118	715	12/14/1994
	A66	5,616,181	04/01/97	Yamamoto et al.	118	723 ER	11/21/1995
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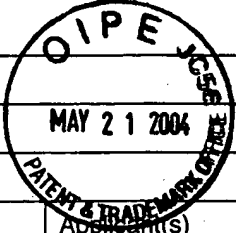
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	B18	99/29924 A1	06/17/1999	WO	C23C	16/04		X
	B19	99/01595	01/14/1999	WO	C30B	25/14		X
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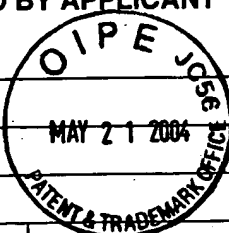
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	C8	Ritala, et al., "Perfectly conformal TiN and Al ₂ O ₃ films deposited by atomic layer deposition", <i>Chemical Vapor Deposition</i> , Vol. 5(1) (January 1999), pp. 7-9.
	C9	Klaus, et al., "Atomically controlled growth of tungsten and tungsten nitride using sequential surface reactions". <i>Appl. Surf. Sci.</i> , Vol 162-163 (2000), pp. 479-491.

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	A68	5,641,984	06/24/97	Aftergut et al.	257	433	08/19/1994	
	A69	5,644,128	07/01/97	Wollnik et al.	250	251	08/25/1994	
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	A71	5,705,224	01/06/98	Murota et al.	427	248.1	01/31/1995	
	A72	5,707,880	01/13/98	Aftergut et al.	437	3	01/17/1997	
	A73	5,711,811	01/27/98	Suntola et al.	118	711	11/28/1995	
	A74	5,730,802	03/24/98	Ishizumi et al.	118	719	12/27/1996	
	A75	5,747,113	05/05/98	Tsai	427	255.5	07/29/1996	
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	A78	5,807,792	09/15/98	Ilg et al.	438	758	12/18/1996	
	A79	5,830,270	11/03/98	McKee et al.	117	106	08/05/1996	
	A80	5,835,677	11/10/98	Li et al.	392	401	10/03/1996	
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	B23	91/10510 A1	07/25/1991	WO	B01J	37/02		X
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	C10	Min, et al., "Atomic layer deposition of TiN thin films by sequential introduction of Ti precursor and NH ₃ ", <i>Symp.: Advanced Interconnects and Contact Materials and Processes for Future Integrated Circuits</i> (Apr. 13-16, 1998), pp. 337-342.						
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	A81	5,851,849	12/22/98	Comizzoli et al.	438	38	05/22/1997	
	A82	5,855,675	01/05/99	Doering et al.	118	719	03/03/1997	
	A83	5,855,680	01/05/99	Soininen et al.	118	719	11/28/1995	
	A84	5,858,102	01/12/99	Tsai	118	719	02/14/1998	
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	A88	5,923,056	07/13/99	Lee et al.	257	192	03/12/1998	
	A89	5,923,985	07/13/99	Aoki et al.	438	301	01/14/1997	
	A90	5,925,574	07/20/99	Aoki et al.	437	31	04/10/1992	
	A91	5,942,040	08/24/99	Kim et al.	118	726	08/27/1997	
	A92	5,947,710	09/07/1999	Cooper, et al.	418	63	06/16/1997	
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	C11	Klaus, et al., "Atomic Layer Deposition of Tungsten using Sequential Surface Chemistry with a Sacrificial Stripping Reaction," Thin Solid Films 360 (2000), Pages 145 – 153, (Accepted Nov. 16, 1999).						
	C12	Min, et al., "Metal-Organic Atomic-Layer Deposition of Titanium-Silicon-Nitride Films", <i>Applied Physics Letters</i> , American Inst. Of Physics, Vol 75(11) (Sept. 13, 1999).						
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(PTO Form 1449 modified)					AMAT/5162		10/024,985	
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	C14	Ritala, et al. "Atomic Layer Epitaxy Growth of TiN Thin Films", <i>J. Electrochem. Soc.</i> , 142(8) (Aug. 1995), pp. 2731-737.						
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	B36	198 20 147	07/01/1999	DE	H01L	21/3205	YES NO
	B37	196 27 017	01/09/1997	DE	H01L	21/283	YES NO
	B38	2 626 110	07/21/1989	FR	H01L	39/24	YES NO
	B39	2 692 597	12/24/1993	FR	C23C	16/00	YES NO
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	C19	Bedair, "Atomic layer epitaxy deposition processes", <i>J. Vac. Sci. Technol.</i> 12(1) (Jan/Feb 1994)					
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